JOURNAL OF Colloid and Interface Science

EDITORS-IN-CHIEF

Milton Kerker
Clarkson University
Potsdam, New York

A. C. Zettlemoyer
Lehigh University
Bethlehem, Pennsylvania

ADVISORY BOARD

A. J. Babchin
Seattle, Washington

E. J. Davis
Seattle, Washington

J. E. Desnoyers
Quebec, Canada

A. Herz
Rochester, New York

M. Jaroniec
Lublin, Poland

L. G. Leal
Pasadena, California

B. Lindman
Lund, Sweden

R. A. Mackay
Aberdeen Proving Ground, Maryland

G. D. Parfitt
Pittsburgh, Pennsylvania

R. M. Pashley
Canberra, Australia

H. M. Princen
Annandale, New Jersey

R. S. Schechter
Austin, Texas

G. W. Simmons
Bethlehem, Pennsylvania

R. S. Subramanian
Potsdam, New York

C. J. van Oss
Buffalo, New York

T. Walker
Cincinnati, Ohio

E. Wolfram
Budapest, Hungary

R. Zana
Strasbourg, France

Victor K. La Mer, Founding Editor
1895–1966

Volume 106

1985

ACADEMIC PRESS, INC.
(Harcourt Brace Jovanovich, Publishers)
San Diego Orlando New York London
Toronto Montreal Sydney Tokyo

Copyright © 1985 by Academic Press, Inc.
All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1985 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0021-9797/85 $3.00

MADE IN THE UNITED STATES OF AMERICA

Contents of Volume 106

NUMBER 1, JULY 1985

C. C. CHRISTOFOROU, G. B. WESTERMANN-CLARK, AND J. L. ANDERSON. The Streaming Potential and Inadequacies of the Helmholtz Equation 1

A. SHARMA AND E. RUCKENSTEIN. Mechanism of Tear Film Rupture and Formation of Dry Spots on Cornea 12

D. VOLLHARDT, M. WITTIG, J. G. PETROV, AND G. MALEWSKI. Infrared Spectroscopic Study of Phosphate Counter Ions Bonded in Skimmed Monolayers and Transferred Multilayers of Octadecylamine 28

YA'ACOV ALMOG AND JACOB KLEIN. Interactions between Mica Surfaces in a Polystyrene–Cyclopentane Solution Near the θ-Temperature 33

K. K. ROHATGI-MUKHERJEE, RUPALI CHAUDHURI, AND BENOY B. BHOWMIK. Molecular Interaction of Phenosafranin with Surfactants and Its Photogalvanic Effect 45

JÁNOS ZSAKÓ. Influence of the Subphase Liquid Activity on the Equilibrium Collapse Curves of Insoluble Mixed Monolayers 51

NORMAN H. SAGERT AND MICHAEL J. QUINN. The Adsorption of 4-Octanol and 3-Ethyl-3-hexanol at the Dodecane/Water Interface 58

M. J. PERONA AND J. O. LECKIE. Proton Stoichiometry for the Adsorption of Cations on Oxide Surfaces 64

F. W. CAIN AND J. C. LEE. A Technique for Studying the Drainage and Rupture of Unstable Liquid Films Formed between Two Captive Bubbles: Measurements on KCl Solutions .. 70

A. L. UNDERWOOD AND E. W. ANACKER. Organic Counterions and Micellar Parameters: Unusual Effects of Hydroxy- and Chlorobenzoates 86

E. PEFFERKORN, L. NABZAR, AND A. CARROY. Adsorption of Polyacrylamide to Na Kaolinite: Correlation between Clay Structure and Surface Properties 94

TETSUO MORIMOTO, TOSHIE KADOTA, AND YASUSHIGE KURODA. Adsorption of Water on CaF_2: Two-Dimensional Condensation of Water 104

TAKAAKI AOBA AND EDGARD C. MORENO. Adsorption of Phosphoserine onto Hydroxyapatite and Its Inhibitory Activity on Crystal Growth 110

R. J. GOOD AND M. V. OSTROVSKY. Mass Transfer and Dynamic Liquid–Liquid Interfacial Tension. I. Experiment 122

M. V. OSTROVSKY AND R. J. GOOD. Mass Transfer and Dynamic Liquid–Liquid Interfacial Tension. II. Theory of the Relation between Change of Interfacial Tension and Change of Phase Volume with Time, in a Stirred System 131

M. V. OSTROVSKY AND R. J. GOOD. Mass Transfer and Dynamic Liquid–Liquid Interfacial Tension. III. Theory of Nonequilibrium Pressure Coefficient of Interfacial Tension 140

J. M. DOUILLARD, R. BENNES, M. PRIVAT, AND L. TENEBRE. Surface Transitions in Binary Liquid Mixtures 146

TOSHIMASA MIYAZAKI, YASUSHIGE KURODA, KUNIMITSU MORISHIGE, SHIGEHARU KITTAKA, JUNZO UMEMURA, TOHRU TAKENAKA, AND TETSUO MORIMOTO. Interaction of the Surface of BeO with Water: In Connection with the Two-Dimensional Condensation of Water .. 154

P. JOOS AND J. VAN HUNSEL. Spreading of Aqueous Surfactant Solutions on Organic Liquids 161

WIKTOR BUDZINSKI AND MAREK SITARSKI. Kinetic Theory of Droplet Evaporation Rate from the Solution of the Boltzmann Equation 168

H. A. VAN STRATEN, M. A. A. SCHOONEN, R. C. S. VERHEUL, AND P. L. DE BRUYN. Precipitation from Supersaturated Aluminate Solutions. IV. Influence of Citrate Ions 175

W. PRAPAITRAKUL AND A. D. KING, JR. The Solubility of Gases in Aqueous Solutions of Decyltrimethyl- and Cetyltrimethylammonium Bromide 186

ALAIN BERTHOD AND JOSEPH GEORGES. Structural Information about Water–Methylene Chloride Microemulsions Derived from Polarographic Study of Oxygen 194

D. L. Feke and W. R. Schowalter. The Influence of Brownian Diffusion on Binary Flow-Induced Collision Rates in Colloidal Dispersions 203

Johannes A. Lercher, G. Ritter, and H. Vinek. Acid–Base Properties of Silica–Alumina Oxides Derived from NaX Zeolites. II. Infrared and Temperature-Programmed Desorption Study of Adsorption of Pyridine 215

Inger Johnson and Gerd Olofsson. Viscoelasticity and Apparent Molar Heat Capacities of Aqueous Micellar Solutions of Hexadecyltrimethylammonium Hydroxybenzoates 222

Kevin J. Farley, David A. Dzombak, and François M. M. Morel. A Surface Precipitation Model for the Sorption of Cations on Metal Oxides 226

Notes

Elsa H. Rueda, Reynaldo L. Grassi, and Miguel A. Blesa. Adsorption and Dissolution in the System Goethite/Aqueous EDTA 243

Mihaela Olteanu and I. Mandru. Mixed Solutions of Cationic and Nonionic Surfactants 247

J. M. Rodríguez and C. Rodríguez. Some Remarks about the Spreading Pressure of the Mixed Monolayer without Lateral Interaction 249

Richard Williams and Mohamed E. Labib. Zinc Sulfide Surface Chemistry: An Electrokinetic Study 251

Noriaki Funasaki, Sakae Hada, Saburo Neya, and Katsunosuke Machida. Cavity Surface Areas and Solubilities of Alkanes in Water 255

Eric Dickinson, Brent S. Murray, and George Stainsby. Time-Dependent Surface Viscosity of Adsorbed Films of Casein + Gelatin at the Oil–Water Interface 259

Martin E. R. Shanahan. Contact-Angle Evaluation from Small Sessile Drops: A Simplified Perturbation Approach 263

Gérard Charbit, Françoise Dorion, and René Gaboriaud. Binding of Sodium Ion to Alkylsulfate Micelles in the Presence of Electrolytes: Electromotive Force Measurements 265

J. M. D. Tascón, V. Cortés Corberán, G. Kremenić, and L. González Tejuca. Enhanced O_2 Adsorption in the Catalytic Oxidation of Isobutene on a Supported Mo–U–O Catalyst 269

Letter to the Editors

Herman E. Ries, Jr. Lipid-Type Films with a Bridged Porphyrin 273

Book Reviews

Milton Kerker. *Aerosols. Science, Technology, and Industrial Applications of Airborne Particles.* Edited by B. Y. H. Liu, D. Y. H. Pui, and H. J. Fissan. 276

Milton Kerker. *Introduction to Ocean Optics.* By K. S. Shifrin. 276

In Memoriam

H. Traitteur. Georg-Maria Schwab, 1899–1984 277

Announcements 278

Number 2, August 1985

C. H. Ho and N. H. Miller. Effect of Humic Acid on Uranium Uptake by Hematite Particles 281

A. H. Hogt, D. E. Gregonis, J. D. Andrade, S. W. Kim, J. Dankert, and J. Feijen. Wettability and ζ Potentials of a Series of Methacrylate Polymers and Copolymers 289

Z. Adamczyk, J. Czarnecki, and P. Warszyński. The Effect of Fluctuations of the Energy Barrier on Colloid Stability 299

Kazuhisa Miura and Tetsuo Morimoto. Spreading Area of Molten Lead–Tin Alloy on Copper Substrate and Crystal Growth of Intermetallic Compounds 307

F. Rodríguez-Reinoso, J. M. Martín-Martínez, M. Molina-Sabio, R. Torregrosa, and J. Garrido-Segovia. Evaluation of the Microporosity in Activated Carbons by *n*-Nonane Preadsorption 315

Gaston Caron, Gérald Perron, Marc Lindheimer, and Jacques E. Desnoyers. Heat Capacities and Volumes of Sodium Alkylbenzene Sulfonates in Water 324

S. R. Culler, H. Ishida, and J. L. Koenig. Structure of Silane Coupling Agents Adsorbed on Silicon Powder 334

Francisco Rodriguez and Russell Mesler. Some Drops Don't Splash 347

Qamardeep S. Bhatia, Jen-Kai Chen, Jeffrey T. Koberstein, John E. Sohn, and John A. Emerson. The Measurement of Polymer Surface Tension by Drop Image Processing: Application to PDMS and Comparison with Theory 353

Abraham Marmur. Kinetics of Particle Deposition from a Stagnant Suspension: Application to Blood Platelets 360

Bruce D. Bowen. Streaming Potential in the Hydrodynamic Entrance Region of Cylindrical and Rectangular Capillaries 367

Che-An Ku, Joseph D. Henry, Jr., Ranjani Siriwardane, and Lloyd Roberts. Particle Transfer from a Continuous Oil to a Dispersed Water Phase: Model Particle Study 377

Richard Williams, P. N. Yocom, and F. S. Stofko. Preparation and Properties of Spherical Zinc Sulfide Particles 388

Daniel P. Rothstein, Bao-Gang Wu, T. Victor Lee, Richard Madey, and Jan-Chan Huang. Adsorption Isotherms and Isosteric Heats of Adsorption for Ethane, Propane, and *n*-Butane on Polystyrene 399

A. J. Babchin and A. L. Frenkel. Concentration-Gradient Driven Flow of Electrolyte Solution through a Capillary Membrane. I. Zero Electric Current Case 410

Leonard W. Schwartz and Stephen Garoff. Contact Angle Hysteresis and the Shape of the Three-Phase Line 422

L. Lavielle and J. Schultz. Surface Properties of Graft Polyethylene in Contact with Water. I. Orientation Phenomena 438

L. Lavielle, J. Schultz, and A. Sanfeld. Surface Properties of Graft Polyethylene in Contact with Water. II. Thermodynamic Aspects 446

Nikola Kallay, Martin Pastuović, and Egon Matijević. Solubility and Enthalpy of Precipitation of Magnesium, Calcium, Strontium, and Barium Dodecyl Sulfates 452

G. K. Iwamoto, L. C. Winterton, R. S. Stoker, R. A. Van Wagenen, J. D. Andrade, and D. F. Mosher. Fibronectin Adsorption Detected by Interfacial Fluorescence 459

Francine Dion, François Bolduc, and Ilona Gruda. Effect of Stilbazolium Betaines' Structure on Their Incorporation into Bilayer Vesicles 465

Hiroyuki Ohshima, Kazuo Nomura, Hiroshi Kamaya, and Issaku Ueda. Liquid Membrane: Equilibrium Potential Distribution across Lipid Monolayer-Coated Oil/Water Interface .. 470

A. Dianne Atherton and Brian W. Barry. Micellar Properties of Phenothiazine Drugs: A Laser Light Scattering Study 479

Myoung Joon Oak, D. A. Saville, and G. E. R. Lamb. Particle Capture on Fibers in Strong Electric Fields. I. Experimental Studies of the Effects of Fiber Charge, Fiber Configuration, and Dendrite Structure 490

Myoung Joon Oak and D. A. Saville. Particle Capture on Fibers in Strong Electric Fields. II. An Experimental Test of a Theory for the Capture of Uncharged Particles on Charged Fibers 502

Luis Alzamora. Study of the Adsorption of *n*-Heptane and 1-Heptene by Aerosil 513

K. I. Marinakis and G. H. Kelsall. Adsorption of Dodecyl Sulfate and Decyl Phosphonate on Wolframite, (Fe, Mn)WO_4, and Their Use in the Two-Liquid Flotation of Fine Wolframite Particles 517

K. Chandrasekaran and J. K. Thomas. Photophysical and Photochemical Properties of Pyrene-Doped TiO_2 Particle Suspensions in Water 532

D. NICHOLSON AND J. H. PETROPOULOS. Calculation of the "Surface Flow" of a Dilute Gas in Model Pores from First Principles. III. Molecular Gas Flow in Single Pores and Simple Model Porous Media 538

J. F. WOJCIAK, R. H. NOTTER, AND G. OBERDÖRSTER. Size Stability of Phosphatidylcholine–Phosphatidylglycerol Aerosols and a Dynamic Film Compression State from Their Interfacial Impaction 547

NOTES

ANTHONY J. I. WARD, MARY C. CARR, AND JOSEPH CRUDDEN. Selection in the Solubilization Kinetics of Benzene–Cyclohexane Mixtures in Aqueous Decyltrimethylammonium Bromide Solutions 558

B. DURAIRAJ AND FRANK D. BLUM. Micelle Formation and Terminal Double Bonds in Sodium Carboxylates 561

LETTER TO THE EDITORS

KAZUO YAMAURA, TETSUYA TANIGAMI, AND SHUJI MATSUZAWA. A Single Large Bubble Consisting of a Very Thin Film of Native Aqueous Silk 565

BOOK REVIEW

P. PENDLETON. *Principles of Adsorption and Adsorption Processes.* By D. M. Ruthven. .. 567

ANNOUNCEMENTS 568

AUTHOR INDEX FOR VOLUME 106 570

The Subject Index for Volume 106 will appear in the December 1985 issue as part of a cumulative index for the year 1985.